CURRICULUM VITAE

Karthikeyan Manickam

Postdoctoral Equivalent Research Fellow
Building Technology & Construction Management (BTCM) Group
Department of Civil Engineering
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EARNED DEGREES

- **Ph.D. in Civil Engineering** *Thesis submitted*
  Indian Institute of Technology Madras, Chennai, India
  CGPA: 8.27
  Thesis title: "Corrosion of post-tensioned anchorage regions with voids due to inadequate grouting and chemical & electrochemical repair methods."

- **M.E. in Construction Engineering and Management** *April 2018*
  College of Engineering Guindy, Anna University, Chennai, India
  CGPA: 9.37/10
  Thesis title: "A feasibility study on the concrete made with micronized biomass silica, M-sand and copper slag as replacement materials."

- **B.E. in Civil Engineering** *April 2015*
  PSG College of Technology, Anna University, Coimbatore, India
  CGPA: 8.69/10
  Thesis title: "Synthesis of titanium dioxide nanoparticles and its partial replacement for cement in concrete and beam-column joint."

AWARDS AND RECOGNITIONS

- Recipient of the **RILEM PhD Travel Grant 2023**
- **Institute postdoctoral equivalent fellowship** at IIT Madras from Jan to June 2023
- **Peer-reviewer** in Sustainable and Resilient Infrastructure International Journal (Taylor & Francis publication)
- **Finalist** of the RILEM Young Researcher's Symposium on Technologies for Low-carbon and Lean Construction (TLC2), Chennai, 2023.
- **Best poster award**, for "*Performance evaluation and service life estimation of galvanic anodes in reinforced concrete systems*" at CORCON 2021 (online mode)
- **Winner of segment 2** (Durability and life-cycle assessment in urban and marine conditions), for the poster titled, "*Accelerated testing and service life estimation of*

galvanic anodes in reinforced concrete systems" at 75th RILEM Annual week, Merida, Mexico, 2021 (online mode)

- **Secretary of AMPP Gateway India Section – South Zone Student Section (NIGIS – SS)** (November 2021 to till date)
- **NACE Foundation India Scholarship 2020** (one among five winners in India)
- **KN Chintamani Memorial Award** for best project work titled "*Synthesis of titanium dioxide nanoparticles and its partial replacement for cement in concrete and beam-column joint*", PSG College of Technology, 2015
- Secured school second rank in Higher Secondary Board Examination, Nirmala Matriculation Higher Secondary School, Chidambaram, 2011

RESEARCH AREAS

- Corrosion and durability of reinforced and prestressed concrete systems
- Grouting of post-tensioned concrete systems
- Cathodic protection of concrete systems
- Supplementary cementitious materials

REFEREED JOURNAL PAPERS

Published:

1. **Manickam, K**., & Pillai, R. G. (2023). *Grouting materials and practices for century-long corrosion protection of post-tensioned concrete bridges.* The Indian Concrete Journal, Vol. 97, No. 1, 6 – 20. https://www.scopus.com/record/display.uri?eid=2-s2.0-85147195738&origin=resultslist&sort=plf-f

2. Kamde, D. K., **Manickam, K.**, Pillai, R. G., & Sergi, G. (2021). *Long-term performance of galvanic anodes for protection of steel reinforced concrete structures*. Journal of Building Engineering, Elsevier, Vol. 42. https://doi.org/10.1016/j.jobe.2021.103049

Manuscripts in preparation:

1. **Manickam, K**., Neelakantan, L., & Pillai, R.G. *Galvanic corrosion of prestressed strands in post-tensioned anchorage regions*.

2. **Manickam, K**., & Pillai, R.G. *Service life estimation and long-term performance parameters of galvanic anodes in reinforced concrete systems.*

3. **Manickam, K.** & Pillai, R.G. *Service life extension of post-tensioned concrete bridges using chemical and electrochemical repair methods.*

REFEREED CONFERENCE PAPER

1. **Manickam, K.**, & Pillai, R. G. (2023). *Galvanic corrosion and cathodic protection of re-grouted post-tensioned concrete systems*, MATEC Web of Conferences. http://dx.doi.org/10.1051/matecconf/202337807002

OTHER CONFERENCE PAPERS

1. **Manickam, K**., & Pillai, R. G. (2023). *Galvanic corrosion and service life extension of grouted post-tensioned concrete systems*, RILEM spring convention and 4th international congress on materials & structural stability, Rabat, Morocco.

2. **Manickam, K.**, & Pillai, R. G. (2022). *Galvanic corrosion of prestressed strands in re-grouted post-tensioned concrete systems*, 6th International conference on repair, rehabilitation and retrofitting, Cape Town, South Africa.

3. **Manickam, K.**, Kamde, D. K., & Pillai, R. G. (2022). *Long-term performance parameters influencing the service life of galvanic anodes in reinforced concrete system, 6th International conference on repair, rehabilitation and retrofitting*, Cape Town, South Africa.

4. **Manickam, K**., Kamde, D. K., & Pillai, R. G. (2022). *Service life estimation of galvanic anodes in reinforced concrete system*, 76th RILEM annual week, Kyoto, Japan.

5. **Manickam, K.**, & Pillai, R. G. (2021). *Performance evaluation and service life estimation of galvanic anodes in reinforced concrete systems*, CORCON 2021, India.

6. **Manickam K**., Srinivasan V., & Pazhani K.C. (2018). *Experimental evaluation on micronized biomass silica with M-sand and copper slag as fine aggregates in concrete*, Advances in Construction Materials and Structures, IIT Roorkee, Uttarakhand, India.

POSTER PRESENTATIONS

1. **Manickam K.,** & Pillai R.G. (2021). *Performance evaluation and service life estimation of galvanic anodes in reinforced concrete systems*, CORCON 2021.

2. **Manickam K.,** Kamde D., & Pillai R.G. (2021). *Accelerated testing and service life estimation of galvanic anodes in reinforced concrete systems*, 75th RILEM Annual Week, 2021.

3. **Manickam K.,** & Pillai R.G. (2021). *Service life estimation of galvanic anodes in reinforced concrete systems*" Corrosion 2021.

4. **Manickam K.,** & Pillai R.G. (2019). *Understanding the compatibility issue in void re-grouting of post-tensioned concrete systems,* CORCON 2019, Mumbai, India.

5. **Manickam K.,** & Pillai R.G. (2019). *Cathodic prevention of prestressed concrete systems,* Concrete Research in India (CRI) symposium, IIT Bombay, India.

WORK EXPERIENCE

- **Graduate Teaching Assistant** *2018 – 2021*
  Indian Institute of Technology Madras, Chennai, India
  - CE 2330 – Civil Engineering Materials and Construction
  - CE 5120 – Maintenance and Rehabilitation of Constructed Facilities
  - NPTEL Course – Maintenance and Repair of Concrete Structures

- **Teaching Assistant** *2016 – 2018*
  College of Engineering Guindy, Anna University, Chennai, India
  - CE 5331 – Strength of Materials Laboratory
  - CE 5312 – Construction Materials Laboratory
  - CE 5611 – Building and Structural Drawing

INTERNSHIP AND TRAINING

- **Exchange scholar** at Civil and Construction Engineering, College of Engineering, **Oregon State University**, USA, under the supervision of Prof. David Trejo for 30 days.
- **Research internship** at the Institute of Building Materials Research and Chair of Building Materials, **RWTH Aachen University**, Aachen, Germany, under the supervision of Prof. Michael Raupach for 30 days.
- Training with Southern Railways India for 30 days
- Training with Neyveli Lignite Corporation (NLC), Tamil Nadu for 15 days

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PROFESSIONAL MEMBERSHIP

- AMPP – Student Member (August 2018 to till date)
- RILEM – Student Member (July 2020 to till date)

REFERENCES

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